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OUR VETERAN COOPERATIVE OBSERVERS

By J. B. KINCER
[Weather Bureau, Washington, December 1935]

During recent years, especially the tragically droughty ones of 1930 and 1934, the importance of weather and climate to the well-being of man, and their influence on our economic life as a nation, have more than ever before been forcibly impressed upon the public mind in this country. During such trying times the Weather Bureau is literally swamped with inquiries from Government officials, especially those having to do with relief and agricultural matters, and also from the general public, as to what it all means, and whether anything like it ever occurred before.

With regard to the importance of climate: Some time ago the President of the United States appointed a Science Advisory Board, composed of outstanding men in different scientific fields. The following are excerpts from the Board's report:

* * * Much depends on the proper development of climatology in the United States, for it has an intimate relation to every form of land study, and an important bearing on land policy. * * * In whatever way we think of the land, or whatever land it is that claims our attention, that land is conditioned by the sky under which it lies, by the climate which is proper to it. * * *

Fortunately, to answer such questions a mass of climatological data is available. Literally millions of records are on file in the Weather Bureau; and, in view of their demonstrated public value and the necessity for the collection in extenso of data at many locations, covering long periods of time, it is of interest to review briefly the early weather observations in the United States that finally developed into the present comprehensive climatological organization. Naturally, in such a history we find an honor roll of cooperative observers, who have to their credit long, devoted, and faithful service in observing and reporting weather conditions from day to day, year in and year out. No story of the collection of basic climatic data would be complete without recognizing these faithful observers of the Nation's weather.

Early weather observations and weather studies in this country were made in a spasmodic manner by several uncoordinated agencies. As far as known, the first records on the American Continent were kept by the Rev. John Campanius at Swedes Fort, near Wilmington, Del., in 1644; but there followed more than a century and a half for which only fragmentary historical references to the subject are available. In 1817 Josiah Meigs, Commissioner of the General Land Office, issued a circular soliciting meteorological observations from the registrars of land offices in different parts of the country, and 2 years later the Surgeon General of the Army established a system of weather records at United States Army posts. About 20 years later, in 1842, James Espy was designated by Congress as meteorologist to the United States Government and assigned to the Office of the Surgeon General of the Army.

Shortly thereafter, in 1847, Prof. Joseph Henry, Secretary of the Smithsonian Institution, submitted a program of organization and work for that Institution, which included a system of meteorological observations for "solving the problem of American storms." From this date the Smithsonian was active in the development of meteorology in the United States. In 1865 the Honorable Isaac Newton, United States Commissioner of Agriculture, endorsed a recommendation of Professor Henry's that a more extensive weather service be established for the benefit of agriculture; and 5 years later, in 1870, the Congress of the United States accepted Newton's recommendation by enacting a joint resolution requiring the taking of observations at all military posts in the United States.

About 20 years later, in 1890, we come to the birth of the Weather Bureau, as it now exists. In that year an act of Congress established the present institution, transferring all official meteorological work, theretofoor handled by several uncoordinated agencies, to the Weather Bureau in the Department of Agriculture. This act went into effect July 1, 1891, and provided, among other things, for *the taking of such meteorological observations as may be necessary to establish and record climatic conditions in the United States.*

In giving this order for collecting sufficient records to establish the climatic characteristics of the United States, the Congress probably did not realize the magnitude of the undertaking. While literally thousands of stations were necessary, the funds available for the inauguration of the work were wholly inadequate to finance the project, especially if the observers were to be compensated for the taking of observations and rendering reports; only a limited number of meteorological instruments could be provided. Under these conditions, there was inaugurated an extensive system of cooperative observations, and the Bureau today is proud of the results attained.

The report of the President's Science Advisory Board, previously referred to, contains the following statment regarding this service:

* * * The climatological service of the Weather Bureau is one of the most extraordinary services ever developed anywhere, and probably nets the public more per dollar expended than any other government service in the world, inasmuch as practically all of this work is done by 4,500 unpaid "cooperative observers", to whom the Weather Bureau has furnished rain gages and thermometers, and whom it has inspired, for the mere love of the work, to keep meteorological records and send in monthly reports. * * *

It really is a remarkable service. We can hardly conceive of so many people, in all parts of the country, freely giving of their time to make the necessary observations and reports every day in the year, and year after year, some of them for 30, 40, and even more than 50 years. The Weather Bureau now has nearly 5,000

cooperative observers, who serve without compensation; and this means that, if for each, on the average, there is required, say, a minimum of 15 minutes a day to take and record the observations, answer numerous questions about local weather, and make the regular monthly reports, the total of time contributed to the Government for the entire service would amount to 15,000 full days of work each year. We know of no other Government cooperative enterprise that even remotely compares with the climatological service of the Weather Bureau; that is, where considerable of the time of those cooperating is required every day in the year, even including Sundays and holidays, for long periods of time.

An examination of the roster of the Bureau's cooperative observers discloses some interesting facts with regard to the period of time many of them have served continuously. Some 300 have to their credit 25 years or more, during which time daily observations have been made and monthly reports rendered to the Bureau. Included in this list who have served their country without monetary compensation for more than a quarter of a century, we find what may be considered an outstanding honor roll, containing the names of those who have served from 40 to more than 50 years, or who within a few months will have to their credit 2 score years of continuous service. The list is as follows, arranged in order of length of service to the end of October 1935:

More than 50 years.—Mr. Elwood Kirkwood, Mauzy, Ind.; Mr. Edward L. Redfern, Taunton, Mass.; Mr. William C. Harris, Dover, N. J.

Forty-nine to fifty years.—Miss L. B. Knapp, Plymouth, Mass.; Mr. S. M. Painter, Bangorville, Ohio (P. O. Fredericktown, Ohio).

Forty-eight to forty-nine years.—Mr. J. H. Aschenbeck, 1730 Penn Avenue, North Minneapolis, Minn.; Mr. Samuel P. Willard, Colchester, Conn.; Mr. E. V. Zoeller, Tarboro, N. C.

Forty-seven to forty-eight years.—Mr. J. J. Davidson, Lafayette, La.; Mr. T. B. Lloyd, Emporium, Pa.; Mr. Wm. Y. Barr, Huntsville, Tex.

Forty-six to forty-seven years.—Mr. Charles Green, Le Roy, Colo. (P. O. Sterling, Colo.).

Forty-five to forty-six years.—Mr. David E. Hadden, Alta, Iowa; Dr. E. H. Raffensperger, Marion, Ohio; Mr. D. G. Gallett, Aberdeen, S. Dak.; Mr. G. S. Clingman, Oakdale, Nebr.

Forty-four to forty-five years.—Mr. Emil V. Wernick, Hillsboro, Wis.; Mr. Charles J. Salick, Watertown, Wis.; Mr. F. L. Williams, Postville, Iowa; Dr. C. W. Bolton, Pontotoc, Miss.; Mr. Emil Britt, Jacksonville, Creg.; Mr. H. M. Watkins, Danville, Va.

Forty-three to forty-four years.—Mr. J. E. Scanlan, Bee Branch, Ark.; Mr. B. P. Gaillard, Dahlonega, Ga.; Mr. O. C. Nussle, Walnut, Ill.; Mr. O. E. Skinner, Columbus, Kans.; Mr. Geo. W. Richards, Maple Plain, Minn.; Mr. Fred A. Tower, Concord, Mass.; Mr. Charles J. Hoof, Napoleon, N. Dak.; Miss Alice B. Scudder, Moxee, Wash. (P. O. Yakima, Wash.); Mr. Barry C. Hawkins, Rock House, N. C. (P. O. Highlands, N. C.).

Forty-two to forty-three years.—Mr. W. J. Casey, Knoxville, Iowa; Miss Annette Koch, Logtown, Miss. (station Pearlington); Mr. H. H. Crisler, Port Gibson, Miss.; Mr. Richard Pohl, Los Lunas, N. Mex.; Mr. John W. Barr, Vickery, Ohio; Mr. Andrew Helfrick, Lycippus, Pa. (P. O. R. F. D. Latrobe); Mr. J. J. Starley, Fillmore, Utah; Mr. Hans Mumm, Rosalia, Wash.

Forty-one to forty-two years.—Mr. George H. Carpenter, Pine River, Wis.; Mr. Frank H. Park, Scottsburg, Ind.; Mr. Leon F. Sanders, Plain Dealing, La.; Mr. James R. Stewart, Princess Anne, Md.; Mr. James R. Hopley, Bucyrus, Ohio; Mr. C. A. Patton, Wooster (1), Ohio; Mr. John Carter, Luling, Tex.; Dr. A. F. Long, Madison, Nebr.

Forty to forty-one years.—Mr. Harold Swenson, New London, Minn.; Mr. W. C. Rowell, Zumbrota, Minn.; Father Adelhelm Hess, Conception, Mo.; Mr. Allen Smith, Lost Creek, W. Va.; Mr. Carl Starck, Rogers, Ark.; Mr. J. L. Hurley, Lenox, Iowa; Mr. John Deschneau, Reads, Minn.; Mr. James E. Lee, Woodville, Miss.; Mr. F. J. Bellows, Kimball, Nebr.; Mr. W. H. Hosmer, Leominster, Mass.; Mr. F. W. Clark, Medina, Ohio; Mr. Samuel G. Wilson, Rugby, Tenn.

The following lack only a few months of having 40 years' service.—Mr. Chas. E. Kissinger, Fergus Falls, Minn.; Mr. E. D. Howe, Table Rock, Nebr.; Mrs. S. W. Sussex, Highmore, S. Dak.; Mr. E. H. Parnell, Graton, Calif. (P. O. Sebastopol, Calif.); Mr. T. A. Ashcraft, Monroe, N. C.; Mr. Winfield S. Guiles, Shawmont, Pa. (P. O. Manayunk, Pa.); Mr. J. W. Lillard, Decatur, Tenn.; Mrs. J. W. Fleming, Ashwood, Tenn. (P. O. Columbia, Tenn.); Mr. C. L. Gold, Cream Hill, Conn.; Mr. H. L. Devin, Sedro-Wooley, Wash.

In addition, a number of families have carried on cooperative work for periods above mentioned; and several institutions have furnished reports for more than 60 years.

It will be noted that the above list contains the names of three observers whose period of service covers more than half a century. These, whose photographs are here presented, deserve special mention:

Mr. ELWOOD KIRKWOOD, Mauzy, Ind., shown standing by his shelter on his farm near the little village of Mauzy, Ind. (P. O. Rushville, Ind.), completed 54 years of weather observations on February 1, 1935. Throughout this entire period observations have been taken on the same farm and practically on the same spot. A letter from Mr. Kirkwood, in his own handwriting, gives much interesting information regarding his Weather Bureau work, but space will not permit reproducing it in full. He was born July 10, 1857, and grew up to manhood on his father's farm. He states that he attended the district school, read good books, and delighted in discussions with older people well versed in scientific subjects, such as geology, astronomy, physical geography, and meteorology. About 1868 he was influenced by an uncle to study local weather conditions and in his diary there are weather notes prepared by his father in the seventies. In the early eighties he purchased maximum and minimum thermometers and a mercurial barometer and has been a most valuable and faithful cooperative observer since that time.

Mr. EDWARD L. REDFERN, Taunton, Mass., also shown standing beside his instrument shelter, began observations on June 17, 1885, and his record has continued without interruption from that date. Instruments were exposed at the Taunton Water Works, where he was connected with the engineering service of the plant, and in addition to serving the Weather Bureau more than half a century, he has passed his fifty-ninth year with the water department. Mr. Redfern is 86 years "young", and his reports continue to be of the same high standard that has characterized them through all these years.

Mr. WILLIAM C. HARRIS, Dover, N. J., was born in England, November 26, 1862, and came to this country before he was 6 years old. He became interested in the weather and began taking observations in 1879 and has a complete record since that date. On March 1, 1885,

FIGURE 1.—Mr. Elwood Kirkwood, cooperative observer, United States Weather Bureau, Mauzy, Ind., January 1, 1881, to date; 78 years old.

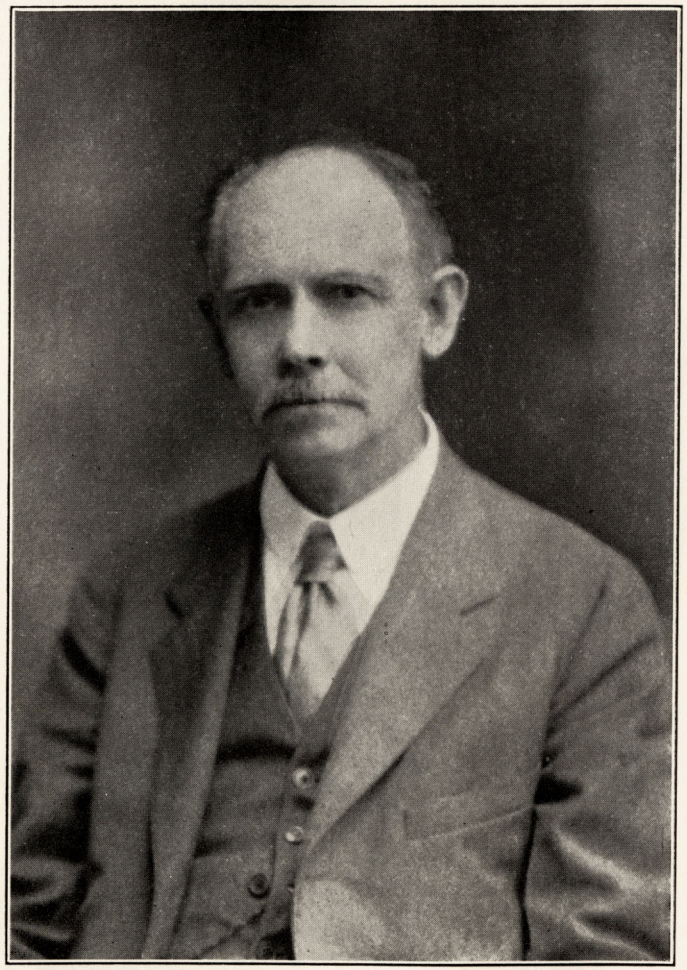

FIGURE 3.—Mr. William C. Harris, cooperative observer, United States Weather Bureau, Dover, N. J., March 1, 1885, to date; 72 years old.

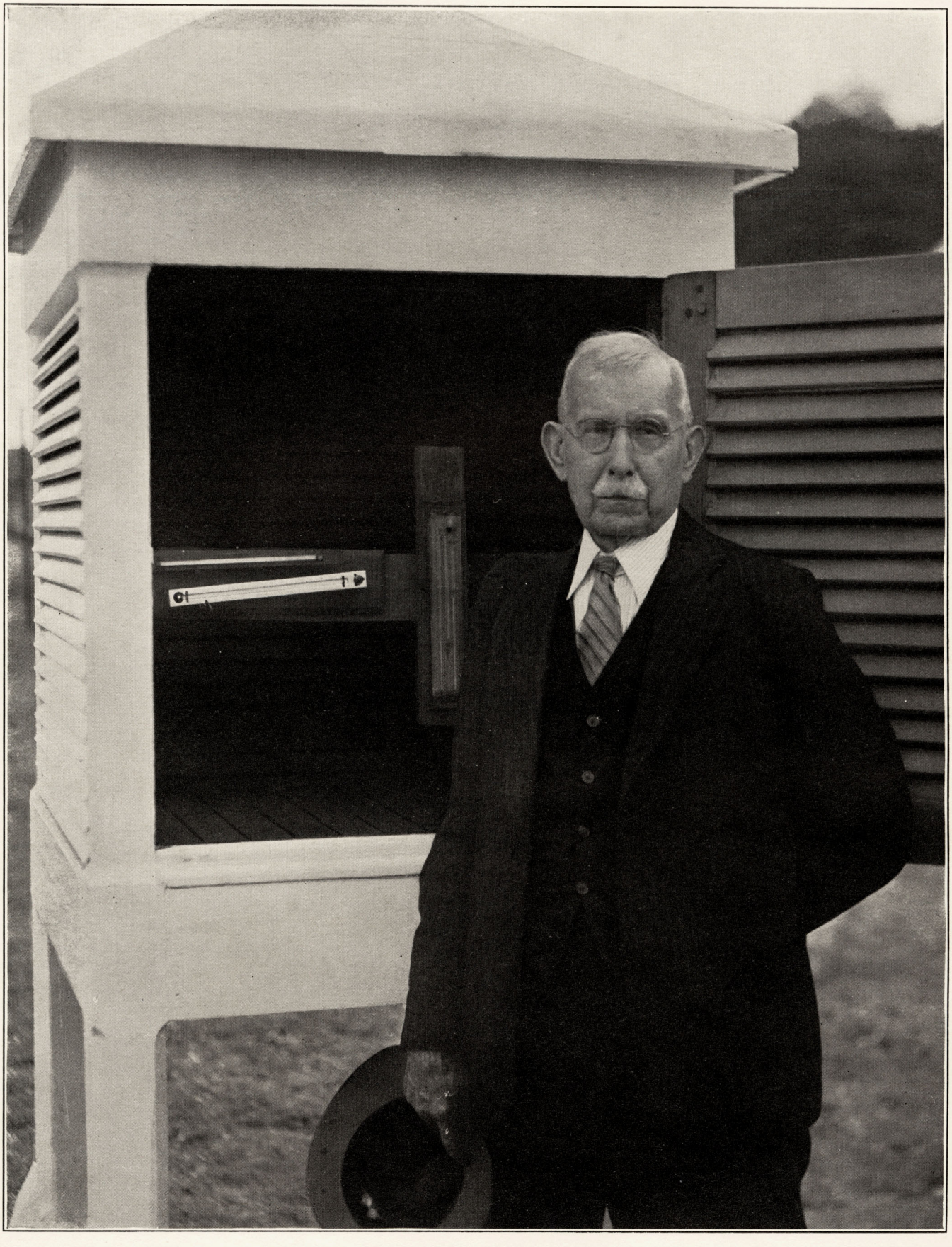

FIGURE 2.—Mr. Edward L. Redfern, cooperative observer, United States Weather Bureau, Taunton, Mass., June 17, 1885, to date; 86 years old.

FIGURE 4.—Miss Louisa B. Knapp, cooperative observer, United States Weather Bureau, Plymouth, Mass. Miss Knapp has served as cooperative observer for 49 years.

FIGURE 6.—Miss Alice B. Scudder, cooperative observer, United States Weather Bureau, Moxee, Wash. Miss Scudder began observations on March 11, 1892, and has rendered reports regularly since that date.

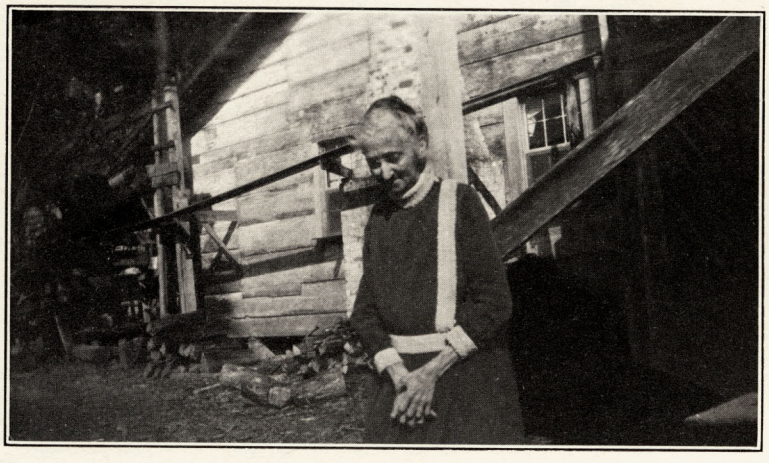

FIGURE 5.—Miss Annette Koch, cooperative observer, United States Weather Bureau, Pearlington, Miss. (P. O. Logtown, Miss.). Miss Koch has been cooperative observer since the early nineties.

FIGURE 1.

FIGURE 2.

he was enlisted as a cooperative observer in the Weather Bureau and has never failed to render reports during this entire period. He is a jeweler.

It is of interest to note that among the nearly 5,000 cooperative observers of the Weather Bureau there are more than 300 women, 3 of whom have more than 40 years' service to their credit. These, whose photographs are presented, represent widely separated sections of the country—New England, Dixie, and the Pacific Northwest:

The dean of women observers is Miss LOUISA B. KNAPP, who is shown (fig. 4) standing beside her rain gage at Plymouth, Mass. Miss Knapp has served for 49 years.

In figure 5 is shown Miss ANNETTE KOCH, observer at Pearlington, Miss. (P. O. Logtown), who has served nearly 43 years. Miss Koch's father kept a private record of weather for many years previous to his death in the early nineties, after which she continued the observational work. She writes: "It has been my pleasure since my father's death to perform this little service to the best of my ability, and I hope to be allowed to continue as long as my work is acceptable to the Weather Bureau." Observations throughout all of these years have been made on a small farm established by her father in 1852.

In figure 6, reproduced from a small photograph, Miss ALICE B. SCUDDER, observer at Moxee, Wash., is shown. Miss Scudder began observational work for the Bureau on March 11, 1892, and has continued ever since. The equipment was obtained at the instance of her father, who was one of the first to locate in the Yakima Valley. She has been a kindergarten teacher in Yakima for 35 years, and has proven a very conscientious and faithful observer for the Weather Bureau.

Limitation of space prevents the citation in this brief summary of many other interesting records, but we cannot refrain from mentioning Mr. SAMUEL WESTERN, Deseret, Utah. Mr. Western has passed his ninety-second birthday and is probably the oldest observer in the cooperative service of the Weather Bureau. He is still active and enthusiastic about his weather work, which has been performed faithfully at practically the same location since September 1899.

WHY DO THEY DO IT?

In the hustle and bustle of our present-day busy world, when many people ask "What is there in it for me?", we may be prone to think that in the matter of assuming the obligations of a cooperative observer of the Weather Bureau, where certain exacting duties must be performed every day in the year during most of one's natural life, the inclination would be to inquire "Why should I do all this work without receiving any monetary compensation?" In other words, we may question just what it is that impels people to voluntarily make this work practically a lifetime job.

This question is eloquently answered by an esteemed and lovable member of our official family, Judge A. S. Peacock, Wakeeney, Kans., who faithfully observes the weather "way out where the West begins." The Judge recently wrote a delightful sketch entitled "Keeping Weather Records", which was published in the "Western Kansas World", from which the following is quoted:

> On this 1st day of August 1935, I am beginning my thirty-first year of continuous service as the duly appointed cooperative weather observer at Wakeeney, Kans., and among the 140 such observers in the State only 4 have served longer. Only once in all of our 30 years on the job have we failed to send in a monthly weather report to the Topeka office of Uncle Sam's Weather Bureau. Almost every week we have sent in a weekly report and for a part of the year two reports. In all the past 30 years we have not failed that many days (an average of 1 day per year) to observe and record the various data that make up the daily weather record at any given place, and that, we may be allowed to say, is some record for faithful attention to what many people would consider dull details. * * * In all the past 30 years or 360 months, for all those 1,560 weekly reports, for the making of those 10,957 daily records, we have never been paid a penny—nor expected a penny from anyone. * * *
>
> Is the making of these weather records considered worth while? It would seem so; these records are frequently used in the trial of cases in various courts. It would further seem so if we may judge by the number of inquiries for weather facts. Within the past 10,957 days we have answered at least that many questions concerning the weather. And that would be a rather low average—only one question per day. If the weather be extra cold or unusually hot; drought or deluge—look out for a flood of inquiries; 15 to 40 in 1 day, occasionally. Think of the work of merely taking the phone receiver down 10,000 times! And right here our envious friend is prone to feel that any man would be foolish to work 30 years on any kind of a job without pay. He is too small and narrow to be able to conceive that any man or woman would work for mere satisfaction; their own personal satisfaction; the pleasure of their neighbors, or the benefit of generations that are yet to come and take possession of the land.
>
> Yes, it is a lot of work and daily bother, but we like it. After 30 years of the habit there is a sort of unexplainable attraction or fascination about it. Yes, we like to answer questions about the weather, though occasionally some of them are called in at very inopportune times. But let 'em come! We are here to be useful, and nothing affords us greater pleasure than to add in some small degree to the pleasure and satisfaction of others.

Mr. S. D. Flora, Weather Bureau section director for Kansas, Topeka, appends the following note: "Recently Mr. R. C. Harlan, at Walnut, has died, leaving only three cooperative observers in Kansas who have served longer than Judge Peacock. The passing of these older observers is a matter of keen regret to us."

SNOW GARLANDS ON TREE LIMBS

By W. J. HUMPHREYS
[Weather Bureau, Washington, December 1935]

In the May 1935 issue of the MONTHLY WEATHER REVIEW I published an account of a very fine snow garland, photographed by Mr. P. E. Gibson of East Grand Rapids, Mich., and gave an explanation of how this "rope of sand" hangs together. A pleasing echo of this article has just been received (Dec. 13, 1935) from Mr. Maurice Blaisdell of Goffstown, N. H., who says that on December 1, 1935, a damp snow fell that melted on the roads but clung to the trees. The next morning, snow-garlands were seen hanging on several trees, and the accompanying pictures of some of them were taken at about 12:45 p. m. of that day.

The temperature was 33° F. at 7 a. m. and 37° at noon. Also, the sky was overcast and there was no wind, and the garlands therefore remained intact all day. After dark, however, there was wind, and by the next morning, December 3, though the temperature was then down to 21°, the garlands, and most of the other snow on the trees, had fallen.

The length of the garland in figure 1 was about 12 inches between points of support, and its thickness 1½ inches. The rope of figure 2, about 1¼ inches thick, hung along a limb in several loops, as shown, like rolls of carded wool.

Well-developed snow garlands are unusual, especially those of long spans—several feet— but they do occur and well merit being hunted for when conditions for their formation are right.